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Boeing Commercial Airplanes
Comments on FAA's Request for Comments, "Review of Existing Regulations"
Docket No. FAA-2004-17168, ~ 35

14 CFR Part 25

Section 25.1353, Electrical equipment and installations; and
Section 25.1431, Electronic equipment

These regulations should be revised to clearly define what is meant by ***electronic*** vs. ***electrical***. The lack of a clear distinction between these two terms has posed problems, and duplicated efforts during certification activities. At times, Boeing has shown compliance with both sections when, in fact, compliance with only one is sufficient.

As an example: Is wiring to or from T-shaped valves, linear variable differential transformers (LVDT), warning lights, etc. considered electrical or electronic? Which of the two noted regulations is more relevant as far as showing compliance?

To solve this problem we request that the FAA:

- Revise §25.1353 to clarify that it pertains to "only that equipment directly related to the generation and distribution of primary electrical power;" and
- Revise §25.1431 to clarify that it pertains to "all other electrically powered equipment not explicitly defined elsewhere

Clarifying the terminology in these sections as indicated will improve the efficiency of the certification/approval process and will not adversely affect aviation system safety.

Section 25.777, Cockpit controls and
Section 25.779, Motion and effect of cockpit controls

Section 25. 777(b) states that the direction of movement of cockpit controls must meet the requirements of §25.779. However, §25.779 explicitly addresses only a certain list of controls; this leaves the requirements for any other cockpit controls, lighting, etc. not listed to be included implicitly. This poses a problem during certification projects.

We request that FAA revise these sections either to address all controls, or to include language describing how to show compliance for any controls not specifically listed in the regulation. Revising these paragraph as requested will improve the efficiency of the certification/approval process and will not adversely affect aviation system safety.

14 CFR Part 183

Section 183.29, Designated Engineering Representatives (DER)

Section 183.29(i) states:

> *"...No designated acoustical engineering representative may determine that a type design change is not an acoustical change..."*

Boeing requests that the FAA review this portion of §183.29, to determine if this is an appropriate limitation on acoustical DER privileges. We consider that this limitation is not consistent with how other types of DERs are managed by the FAA, and that this limitation imposes unneeded financial and organizational burdens both on applicants as well as on FAA Aircraft Certification Offices.

Section 183.29(a) through (e) specify limitations on other types of DERs (for example, structures, systems, radio, etc). These paragraphs allow for DER approvals *"...within limits prescribed by and under the general supervision of the Administrator."* There are no specific, prescriptive limitations listed, which leaves great latitude for the FAA Certification Office to determine what is appropriate for a given situation. The types of DERs listed in paragraphs (a) through (e) are frequently delegated compliance approvals that are directly related to aircraft safety of flight.

Section 183.29(i) lists very detailed, specific limitations on acoustical DERs. The limitation cited above (determining that a type design change is not an acoustical change) requires applicants to provide a significant amount of information and data to the FAA to determine how a type design change should be certified for noise. In turn, this requires the FAA Aircraft Certification Offices to expend significant resources reviewing minor changes to aircraft type design. These reviews impose administrative costs and schedule flow time on applicants and the FAA associated with the formal presentation and approval of minor changes. These administrative and schedule costs could be minimized if the FAA Aircraft Certification Offices were allowed to delegate this determination to appropriately qualified DERs.

In addition, applying the risk management principles described in the FAA Aircraft Certification (AVR) Safety Management program indicates that noise certification poses a very low risk. Consequently, the risk management principles would suggest that acoustical issues should receive more delegation than areas which are directly related to aircraft safety of flight. This is the opposite of the current limitations listed in §183.29.

Boeing requests that the FAA remove the limitation related to determination of acoustical change from §183.29(i). Revising this paragraph will improve the efficiency of FAA and industry and will not adversely affect aviation system safety.